

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS  
COMMITTEE ON SCIENCE  
U.S. HOUSE OF REPRESENTATIVES

**HEARING CHARTER**

**“Health Care Information Technology: What are the Opportunities for and Barriers to Interoperable Health Information Technology Systems?”**

February 23, 2006  
12:00 p.m. to 2:00 p.m. (PST)

Providence St. Vincent Medical Center  
Souther Auditorium  
9205 SW Barnes Road  
Portland, Oregon 97225

**Purpose:**

On February 23, 2006 at 12:00 p.m. in Portland, Oregon, the Subcommittee on Environment, Technology, and Standards of the House Science Committee will hold a field hearing about the opportunities for and barriers to interoperable health information technology (IT) systems.

The purpose of this hearing is to learn about the potential benefits of IT to health care providers and consumers, the impact of IT on health care costs and quality, and about the major challenges to implementing a national health information technology system. The hearing will review federal, state and private-sector efforts to promote connectivity, which would enable health care providers to access patient data from any location. The hearing will examine efforts to develop standards for security, privacy and interoperability, which are crucial to the adoption of nationwide health IT systems.

The Committee plans to examine these overarching questions:

1. What are the potential benefits of information technology to the health care industry and health care consumers?
2. What should federal and state governments and the private sector do to foster the development of better health IT systems? What is preventing the widespread adoption of these systems?
3. What is happening in the states of Oregon and Washington to help insurers, hospitals, doctors, and other providers develop more comprehensive health IT systems? What role has the federal government played? What else needs to be done?

**Witnesses:**

- **Dr. William Jeffrey**, Director of the National Institute of Standards and Technology (NIST). NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. NIST has a memorandum of understanding with the Department of Health and Human Services (HHS) to collaborate on the development of health IT infrastructure and standards.
- **Dr. Jody Pettit**, Project Chair, Oregon Health Care Quality Corp (QCorp). The Oregon Health Care Quality Corp provides both a forum for sharing information and best practices and a mechanism to identify strategic projects for improving health care through community based activities. Dr. Pettit chairs the Oregon Health Information Infrastructure (OHII) Project for the QCorp. The OHII seeks to create an Oregon multi-stakeholder collaboration to apply healthcare information and communication technology so that care is timely, effective, efficient, safe, equitable and patient-centered.
- **Mr. Luis Machuca**, President and CEO of Kryptiq Corporation. Kryptiq makes software products for health care providers for secure messaging, electronic prescribing, disease management and contract management.
- **Dr. Homer Chin**, Medical Director for Clinical Information Systems, Kaiser Permanente Northwest. Kaiser Permanente is America's leading integrated health care organization, with 8.2 million enrolled members. Kaiser Permanente Northwest started a pilot health IT system in 1994 and rolled out a full system in 1998.
- **Mr. Prem Urali**, President and CEO of HealthUnity Corporation. HealthUnity makes software and hardware health IT products for health care providers.
- **Ms. Diane Cecchetti, RN**, President and CEO of MultiCare Health System. MultiCare Health System is the largest provider of key medical services in Pierce County, south King County and much of southwest Washington State. MultiCare has adopted a comprehensive health IT system throughout its network of providers.
- **Mr. John Jay Kenagy**, Chief Information Officer, Oregon Health & Science University (OHSU). OHSU offers instruction in health care, biomedical science, environmental engineering and computer science for more than 3,900 students, interns, residents, fellows and clinical trainees each year. Furthermore, the University provides education and training for about 18,000 health professionals through its continuing education programs. OHSU is currently implementing an electronic health record system for its patients.

## **Background:**

### **What Are Interoperable Health IT Systems?**

Interoperability allows different information technology systems and software applications to communicate, exchange data, and use that information. Interoperable health IT systems can involve the use of and the ability to share: up-to-date patient electronic health records (EHRs); electronic physician orders for drug prescriptions and lab tests; electronic referrals to specialists and other health care providers; and electronic access to current treatments and research findings. For these systems to share information, especially if they are different IT systems, they must use common standards for data transmission, medical terminology, security, and other features.

### **Potential Benefits of Health IT Systems**

Studies suggest that eliminating errors related to paperwork and enabling better communication between health care providers could improve treatment and lower costs in the healthcare industry. For the purposes of this charter, health care providers include both individuals (such as physicians, nurses and lab technicians) and institutions (such as hospitals and medical practices). According to a study in the *Annals of Family Medicine*, miscommunication is a major cause of 80 percent of medical errors, including poor communication between physicians, misinformation in medical records and misfiled charts.<sup>1</sup> Providing doctors with access to EHRs could reduce duplicate medical tests and adverse drug interactions. A patient's EHR would include all of his or her lab tests and/or drug allergies, thereby reducing the chance for error. In addition, EHRs could provide health care workers with the ability to access a patient's medical history at short notice in emergency situations. Interoperable health IT systems could allow physicians to: share patient medical information and lab results between hospitals, labs, and clinics; order drug prescriptions; and alert patients of drug recalls much faster than by sharing paper records. Several health associations estimate that the potential savings of greater IT adoption by the healthcare industry run into the tens of billions of dollars. A recent study in the journal *Health Affairs* estimates that a fully interoperable national health IT network could yield \$77.8 billion per year in savings, or 5 percent of America's annual health care spending.<sup>2</sup>

### **Barriers to Adoption of Health IT Systems**

The adoption of EHRs and other health-related IT has been slow. According to a May 2005 Government Accountability Office report on the subject, the Department of Health and Human Services (HHS) has identified the health care industry as the largest part of the U.S. economy that has not fully embraced IT.<sup>3</sup> An expert at Brigham and Women's Hospital in Boston, found that the healthcare industry invests only about 2 percent of its revenues in IT.<sup>4</sup> Other information-intensive industries invest approximately 10 percent of revenues. There are many reasons for this relative lack of adoption including: **cost of purchasing IT systems** and

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<sup>1</sup> *Annals of Family Medicine*. July/August 2004.

<sup>2</sup> *Health Affairs*. January 2005.

"The Value of Health Care Information Exchange and Interoperability," by Jan Walker et al.

<sup>3</sup> "Health Information Technology: HHS is Taking Steps to Develop a National Strategy,"

GAO Report to the Chairman, Committee on the Budget, House of Representatives. May 2005

<sup>4</sup> *The Economist*, April 28, 2005

"The No-Computer Virus."

institutional resistance to the adoption of new technology; **contradictory incentives** for healthcare providers and payers; **concerns about security systems for patient records**; and the **lack of standards** necessary for uniform data entry and exchange, software, and terminology.

Estimates of the number of providers who currently utilize EHRs range from 5 percent to 20 percent nationwide, meaning that the remainder rely on paper-based records that must be faxed or mailed if a doctor outside of a medical office or provider network wants to see a patient's history. According to a study in *Health Affairs*, only 12 percent of practices with five or fewer full-time-equivalent physicians, where most physicians work and most patients receive care, use EHRs.<sup>5</sup> A major reason for low rate of utilization is the **cost of IT systems**. Large healthcare providers and hospitals have a distinct advantage over smaller and rural practices because they have greater access to capital to purchase new technology, more integrated offices, and larger physical concentrations of doctors and patients. In addition, many physicians have used paper records and files for years, and are uncomfortable abandoning this system to use IT.

A typical medical practice in the U.S. has five doctors handling approximately 4,000 patient visits in a year. The Markle Foundation in New York finds that these practices would lose money if they had to invest in, and learn how to use an interoperable health IT system. Furthermore, the current medical reimbursement system creates a **contradiction** between insurers and patients on the one hand, who would benefit from IT adoption, and healthcare providers on the other hand, who would have to pay for IT adoption. Providers do not necessarily have the economic incentive to adopt these systems, even if they are more convenient to use. Currently, most health care providers operate on a financial reimbursement system, which does not reward efficiency. For instance, a physician may wish to order a duplicate test for a patient rather than wait for the physical transfer of the patient's test results from another practice. The patient's health plan or insurance company will reimburse the provider for this additional test. Use of an IT system could reduce this inefficiency by providing remote access to the patient's original test results. HMOs, such as Kaiser Permanente, are exceptions to this model and have incentives to adopt IT because the payer and provider exist in a single financial entity.

In 2005, ChoicePoint informed approximately 163,000 people that their personal information, including names, addresses, birth dates, social security numbers and credit summary information were obtained by suspected criminals posing as legitimate business people. This data breach highlights **security concerns** for IT. Most patients want to restrict access to their medical records, which contain sensitive personal information, to their doctors and to other vital medical personnel. Whereas paper files may not provide ideal security, breaches require deliberate action, and even then the bulk of paper records prevents or discourages large-scale mischief. With EHRs, it is easier to access a lot of information quickly because data can be distributed to hundreds or even thousands of people at the click of a button. Last February, for example, the names and addresses of over 6,000 HIV carriers were accidentally emailed to all 900 staff members of the Palm Beach County Health Department. For these reasons, system designers must ensure that passwords and encryption provide adequate security to prevent hackers and other unauthorized users from gaining access to sensitive personal information. The system

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<sup>5</sup> *Health Affairs*. September 2005.

"Medical groups' adoption of electronic health records and information systems," by D. Gans et al.

design itself must also include checks that protect this information from inadvertently being transmitted to inappropriate recipients.

Some healthcare networks, organizations, municipalities and states have been working to develop health IT systems. They recognize the need for connectivity using agreed-upon **interoperability standards**. Comprehensive healthcare networks, such as Kaiser Permanente Northwest and the Veterans Health Administration, have sophisticated IT systems, which allow extensive connectivity within their networks. However, these are closed systems which cannot share electronic patient information with outside providers. Some cities have implemented pilot programs which allow interconnectivity at various levels, but this often involves the exchange of information in PDF form. PDF files are not easily transferred into searchable databases. If agreed-upon standards existed for EHR data exchange, these burgeoning systems could adopt them, making seamless and efficient connectivity between them much easier.

### **Federal Initiatives:**

In April 2004, President Bush established a national goal that most Americans have EHRs within 10 years. To carry out the President's goal, HHS, in partnership with the National Institute of Standards and Technology (NIST), has embarked on a number of initiatives, with both public and private entities, to facilitate health IT adoption without directly mandating standards.

#### **Office of National Health Information Technology Coordinator**

In April 2004, President Bush signed an executive order establishing the position of the National Health Information Technology Coordinator (National Coordinator) in HHS. The National Coordinator was charged to develop a plan to "guide the nationwide implementation of interoperable health IT in both the public and private health care sectors that will reduce medical errors, improve quality, and produce greater value for health care expenditures."

On May 6, 2004, Dr. David Brailer was appointed as the National Coordinator for Health IT. Dr. Brailer previously served as a Senior Fellow at the Health Technology Center in San Francisco, CA, a non-profit research and education organization that provides advice to health care organizations about the future impact of technology in health care delivery. Dr. Brailer announced a plan to achieve health interoperability nationwide, which includes having NIST work with the National Coordinator's Office to oversee the development of standards to facilitate this process. HHS and NIST signed a Memorandum of Understanding, which transfers \$6 million from HHS to NIST to pay for its health IT work. The National Coordinator's Office and NIST are collaborating with industry, standards organizations, consortia, and government agencies to build tools and prototypes to advance the adoption of IT within healthcare systems.

In his 2006 State of the Union address, President Bush called for the "wider use of electronic records and other health information technology, to help control costs and reduce dangerous medical errors." The President's 2007 budget requests \$116 million for the Office of the National Coordinator for Health Information Technology, an increase of \$55 million or 90 percent over the FY 2006 enacted level. Funding will support strategic planning, coordination, and analysis of technical, economic, and other issues related to public and private adoption of

health IT. The total FY 2007 budget request for health IT initiatives in HHS is \$169 million, an increase of \$58 million or 52 percent over the FY 2006 enacted level.

## NIST

NIST is the nation's oldest federal laboratory and conducts research in a wide range of physical and engineering sciences. NIST researchers collaborate with colleagues in industry, academic institutions, and other government agencies to support the development of standards for a broad array of technical fields including software, hardware, communications, and computer security. NIST activities to support the President's health IT goals include participation in key standards-related efforts, developing performance and conformance metrics for health IT, developing procedures for certifying conformance to consensus-based standards, and helping to secure sensitive information and information systems. NIST has extensive experience working with industry on standards development, conformance testing, and other aspects of standards. In particular NIST has worked with the IT industry on standards for interoperability and computer security, which would be a significant component of health IT. NIST helped HHS develop Requests for Proposals for contracts on health IT, and it continues to work on these projects, providing technical advice and other support to the participants.

## HHS Contracts for Health IT Development

On October 6, 2005, Secretary Michael Leavitt announced that HHS has let three contracts to develop a *Standards Harmonization Process*, a *Compliance Certification Process*, and *Privacy and Security Solutions*. On November 10, HHS awarded contracts to four groups of health care and health IT organizations to develop a *Nationwide Health Information Network*.

*Standards Harmonization Process: \$3,300,000 annually for three years*

HHS awarded a contract to the American National Standards Institute, a non-profit organization that administers and coordinates the U.S. voluntary standardization activities, to convene the Health Information Technology Standards Panel (HITSP). The HITSP will bring together U.S. standards development organizations and other stakeholders to develop, prototype, and evaluate a harmonization process for achieving a widely accepted and useful set of health IT interoperability standards. NIST staff will work with the HITSP during the standards harmonization process.

*Compliance Certification Process: \$2,700,000 total over three years*

HHS awarded a contract to a non-profit organization, the Certification Commission for Health Information Technology (CCHIT) to develop criteria and evaluation processes for certifying EHRs and the infrastructure or network components through which they interoperate. More than 200 EHR products are on the market, but there are no criteria for prospective buyers to objectively evaluate them. This hinders informed purchasing decisions and further discourages the widespread adoption of health IT systems. CCHIT submitted recommendations to HHS for ambulatory EHR certification criteria in December 2005, and developed an evaluation process for ambulatory health records in January 2006. The CCHIT is currently developing pilots for

these projects. A cross disciplinary team of NIST researchers serves as a technical advisory committee to support the CCHIT. An optional extension to continue refinement and assessment of the processes during a fourth year will be up for consideration as the base period is completed.

*Privacy and Security Solutions: \$11,500,000 total for 18 Months*

Regulations promulgated pursuant to the Health Insurance Portability and Accountability Act (HIPAA) established baseline health care privacy requirements for protected health information and established security requirements for electronic protected health information. Many states have adopted policies that go beyond HIPAA. In addition, the manner in which hospitals, physicians and other health care organizations implement required security and privacy policies varies and is tailored to meet their individual organizations' needs. These variations in policies present challenges for widespread electronic health information exchange, due to the lack of common standards.

HHS awarded a contract to the Research Triangle Institute International (RTI), a private, nonprofit corporation to oversee the Health Information Security and Privacy Collaboration (HISPC). HISPC is a new partnership consisting of a multi-disciplinary team of experts and the National Governors Association. The HISPC will develop plans to harmonize the variations in business policies and state laws that affect privacy and security practices. NIST will provide expertise to help ensure that the systems being developed are secure and address privacy.

*Nationwide Health Information Network: \$18,600,000 total for one year*

HHS awarded contracts to four groups of health care and health IT organizations to develop pilot projects for secure information sharing in a nationwide health IT system. The four consortia are led by Accenture, Computer Science Corporation, IBM, and Northrop Grumman. NIST will create an architecture management system to serve as a repository for the content of the four prototypes being proposed.

Health IT Adoption Initiative

The National Coordinator's Office is partnering with the George Washington University and Massachusetts General Hospital/Harvard Institute for Health Policy through a contract on the Health IT (HIT) Adoption Initiative. The new initiative is aimed at better characterizing and measuring the state of EHR adoption and determining the effectiveness of policies aimed at accelerating adoption of EHRs and interoperability. These institutions will examine the current state of metrics for assessing EHR adoption measurement and make publicly available the gaps in adoption measurement data and the currently known gaps in actual adoption. The HIT Adoption Initiative will provide not only a baseline measurement on EHR adoption rates but also a quantifiable method for measuring the anticipated increased uptake of health IT. Beginning in the fall of 2006, an annual report will synthesize multiple surveys using the methodologies developed under the HIT Adoption Initiative, and ultimately provide metrics with which to assess the progress of the entire program.

### American Health Information Community

The April 2004 Executive Order called on the National Coordinator to coordinate outreach and consultation by the relevant branch agencies (including Federal commissions) with public and private parties of interest, including consumers, providers, payers, and administrators. As part of this collaboration, Secretary Leavitt created the American Health Information Community (AHIC) on September 13, 2005. The AHIC provides input and recommendations to HHS on how to make health records digital and interoperable, and assure that the privacy and security of those records are protected, in a smooth, market-led way. Membership includes officials from HHS and its component agencies, and other federal agencies, including the Department of Veterans Affairs, Office of Personnel Management, Department of Commerce, Department of Treasury, and the Department of Defense. Other members include physicians, health care providers, a patient advocate, payers, purchasers, public health experts and business officials. The AHIC was chartered for two years with the option to renew, and will have a duration of no more than five years. A list of Community members can be found at:

[www.hhs.gov/healthit/ahic.html](http://www.hhs.gov/healthit/ahic.html)

### **State of Washington Initiatives:**

The State of Washington has recently implemented a Health Information Technology and Electronic Medical Records Initiative. The initiative will develop a strategy for the adoption and use of electronic medical records and health information technologies.

The Washington State Health Care Authority (HCA), together with the Health Information Infrastructure Advisory Board (HIIAB), will develop the health information and technology strategy. In addition to the HIIAB, the HCA is also creating a Health Information Infrastructure Stakeholder Advisory Committee (HIISAC) that will provide feedback and input to the HIIAB. Unlike the HIIAB, the HIISAC will represent a broad variety of stakeholder groups such as consumers, clinicians, business, payers of health care, employers, and health care organizations (hospitals, carriers, long term care facilities).

### **State of Oregon Initiatives:**

The Oregon Health Policy Research (OHPR) office has been working closely with key health care experts and stakeholders around the state on electronic health records and data connectivity issues through its staffing of the Oregon's Health Policy Commission (OHPC). The OHPC is directed by statute to develop and oversee health policy and planning for the state and includes key health leaders from both the private sector and the state legislature. The Commission's recent Subcommittee on Electronic Health Records and Data Connectivity, developed key recommendations to move the state's health information technology agenda forward. The Oregon Healthcare Quality Corporation (QCorp) acts as a non-profit private sector partner with the OHPR.

QCorp has worked in partnership on a number of state initiatives for health IT including the Oregon Chronic Disease Data Clearinghouse. The Clearinghouse merged data from 11 health



plans on 150,000 patients with asthma and diabetes for use in developing reports for physician practices. On a 10-point rating scale, clinicians and practice managers rated the value of the merged, single source and format reports from the Clearinghouse as 8.4 (highly favorable) compared to 1.4 (highly unfavorable) for the traditional approach with multiple report sources and formats. QCorp also works on the Electronic Health Record Inventory. An important part of this work is assessing the current state of EHR adoption. In addition, QCorp is currently working with the Oregon Business Council EHR Leadership Team to develop next steps for health data exchange.

### **Witness Questions:**

The witnesses were asked to answer the following questions in their testimony.

#### **Dr. William Jeffrey, Director of NIST.**

1. What are the most significant standards-related barriers to the widespread adoption of information technology within the health care industry?
2. What is NIST's role in removing these barriers and what is the expected timeline for the completion of these activities?
3. How is NIST working with the health-care industry, information technology companies, federal agencies, states and other stakeholders to facilitate this process?
4. What role will NIST play in the HHS National Health Information Infrastructure? What responsibilities has HHS assigned NIST?

#### **Dr. Jody Pettit, Project Chair, Oregon Health Care Quality Corp.**

1. What role or potential role does health information technology play in improving the delivery of health care in Oregon?
2. What role does the Oregon Health Care Quality Corporation play in this process?
3. What incentives and barriers exist to the adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What has been the experience of the State of Oregon in this regard?
4. What specific measures can the federal or state governments take to encourage broader adoption of health information technology?

#### **Mr. Luis Machuca, President and CEO of Kryptiq Corp.**

1. What role or potential role does health information technology play in improving the delivery of health care in Oregon?
2. What benefits have been realized or are expected from the widespread adoption of information technology in the health care industry?
3. What incentives and barriers exist to the adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What has been Kryptiq's experience with these incentives and barriers?
4. To what extent have the Department of Health and Human Services and NIST reached out to businesses like yours in its effort to develop a national strategy on Health IT?
5. What specific measures can the federal or state governments take to encourage broader adoption of health information technology?

**Dr. Homer Chin, Medical Director for Clinical Information Systems, Kaiser Permanente Northwest.**

1. How does Kaiser Permanente use healthcare-specific information technology? What benefits has Kaiser Permanente realized so far? What future benefits are expected from the further adoption of this kind of technology?
2. What incentives and barriers exist to the broader adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What was Kaiser Permanente's experience with these incentives and barriers?
3. How does Kaiser Permanente differ from other non-HMO providers? Do these differences affect the incentives for adoption of healthcare IT?
4. To what extent have the Department of Health and Human Services and NIST reached out to businesses like yours in its effort to develop a national strategy on Health IT?
5. What specific measures can the federal or state governments take to encourage broader adoption of health information technology?

**Mr. Prem Urali, President and CEO of HealthUnity Corp.**

1. What role or potential role does health information technology play in improving the delivery of health care in Washington?
2. What benefits have been realized or are expected from the widespread adoption of information technology in the health care industry?
3. What incentives and barriers exist to the adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What has been HealthUnity's experience with these incentives and barriers?
4. To what extent have the Department of Health and Human Services and NIST reached out to businesses like yours in its effort to develop a national strategy on Health IT?
5. What specific measures could the federal or state governments take to encourage broader adoption of health information technology?

**Ms. Diane Cecchetti RN, President and CEO of MultiCare Health System.**

1. How does MultiCare use healthcare-specific information technology? What benefits has MultiCare realized from adoption of health IT? What future benefits are expected from the further adoption of this kind of technology?
2. What incentives and barriers exist to the broader adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What has been MultiCare's experience with these incentives and barriers?
3. To what extent have the Department of Health and Human Services and NIST reached out to businesses like yours in its effort to develop a national strategy on Health IT?
4. What specific measures can the federal or state governments take to encourage broader adoption of health information technology?

**Mr. John Jay Kenagy, Chief Information Officer, Oregon Health & Science University (OHSU).**

1. How does Oregon Health and Science University (OHSU) use healthcare-specific information technology? What benefits has OHSU realized so far? What future benefits are expected from this kind of technology?

2. What incentives and barriers exist to the broader adoption of information technology in the health care industry, and are these financial, technical, or of some other nature? What has been OHSU's experience with these incentives and barriers?
3. To what extent have the Department of Health and Human Services and NIST reached out to institutions like yours in its effort to develop a national strategy on Health IT?
4. What specific measures can the Federal or State governments take to help the broader adoption of health information technology?